

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (Currently Amended) An extended  $\epsilon$ -filter image processing apparatus, ~~named~~  
~~extended  $\epsilon$ -filter~~, comprising:
  - an input section for receiving an input image;
  - a calculation section for calculating ~~the~~ a small-amplitude variation component of the input image;
  - a signal processing section for adding the ~~output of~~ small-amplitude variation component calculated by the calculation section to the input signal image to provide a wrinkle enhanced image, and for subtracting it the small-amplitude variation component from the input signal image to provide a smooth skin image; and
  - an output section for outputting ~~both of~~ at least one of the wrinkle enhanced image and the smooth skin image, ~~or outputting either of the wrinkle enhanced or the smooth skin image~~ according to ~~the~~ an instruction from a correction instruction section.
2. (Currently Amended) The extended  $\epsilon$ -filter image processing apparatus as claimed in claim 1, wherein the calculation section calculates the small-amplitude variation component of

the input image according to the equation  $\sum_i \sum_j a_{i,j} \cdot F(x(m,n) - x(m+i, n+j))$  ~~the second term~~  
~~of an expression (1) which is expressed by:~~ wherein

$$y(m,n) = x(m,n) - \sum_i \sum_j a_{i,j} \cdot F(x(m,n) - x(m+i, n+j)),$$

where

$y(m,n)$  is the output image;

$x(m,n)$  is the input image;

$a_{i,j}$  is a weight coefficient; and

$F(x)$  is a nonlinear function, in which  $F(x)=0$  when  $|x| > \epsilon_0$   ~~$|x| > \epsilon_0$~~ .

3. (Currently Amended) An image processing apparatus comprising primary and secondary  $\epsilon$ -filter blocks and an addition section~~[[:]~~,

[[a]] the primary  $\epsilon$ -filter block including comprising:

an input section for receiving an input image;

a calculation section for calculating ~~the a~~ small-amplitude variation component of the input image by a ~~small~~ first  $\epsilon$  value, ~~given as  $\epsilon_h$   $\epsilon_h$~~ ;

a subtracting section for subtracting the small-amplitude variation component from the input image to provide a smooth skin image; and

an output section for outputting the smooth skin image;

[[a]] the secondary  $\epsilon$ -filter block including comprising:

an input section for receiving the input image;

a calculation section for calculating ~~the~~ a minute-amplitude variation component of the input image by a ~~minute~~ second  $\epsilon$  value ~~given as  $\epsilon_1$~~   $\epsilon_L$  which is less than  $[\epsilon_h]$  the first  $\epsilon$  value  $\epsilon_h$ ; and

an output section for outputting the minute-amplitude variation component; and  
the addition section ~~for~~ adding the minute-amplitude variation component output  $[[of]]$  from the secondary  $\epsilon$ -filter block to the smooth skin image output  $[[of]]$  from the primary  $\epsilon$ -filter block to obtain ~~the~~ a natural looking "~~smooth skin~~" smooth skin image preserving ~~the~~ a grain and texture of the skin.

4. (Currently Amended) An image processing apparatus comprising an extended  $\epsilon$  -filter block, an ordinary  $\epsilon$  -filter block and a minute amplitude component adjustment section,  
the extended  $\epsilon$  -filter block, ~~including~~ comprising:

an input section for receiving an input image;

a calculation section for calculating ~~the~~ a small-amplitude variation component of the input image by a ~~small~~ first  $\epsilon$  value, ~~given as  $\epsilon_h$~~   $\epsilon_h$  ;

a signal processing section for adding the small-amplitude variation component output  $[[of]]$  from the calculation section to the input signal to provide a wrinkle enhanced image, and for subtracting  $[[it]]$  small-amplitude variation component from the input signal to provide a smooth skin image; and

an output section for outputting ~~either of~~ the wrinkle enhanced or the smooth skin image according to ~~the~~ an instruction from a correction instruction section;

the ~~second~~ ordinary  $\epsilon$ -filter ~~including~~ comprising:

- an input section for receiving the input image;
- a calculation section for calculating ~~the~~ a minute-amplitude variation component of the input image by a ~~minute~~ second  $\epsilon$  value ~~given as  $\epsilon_1$~~   $\epsilon_L$  which is less than [[ $\epsilon_h$ ]] the first  $\epsilon$  value  $\epsilon_h$ ; and
- an output section for outputting the minute-amplitude variation component; and

[[a]] the minute amplitude component adjustment section for adding the minute-amplitude variation component output from the ordinary  $\epsilon$ -filter to the wrinkle enhanced or the smooth skin image output from the extended  $\epsilon$ -filter block or subtracting the secondary block's output to or from the primary block's output the minute-amplitude variation component output from the ordinary  $\epsilon$ -filter from the wrinkle enhanced or the smooth skin image output from the extended  $\epsilon$ -filter block, according to the correction instruction in order to obtain ~~the~~ a natural looking smooth or wrinkle enhanced skin image with ~~the~~ a grain and texture of a skin held in an original state.

5. (Currently Amended) An image processing apparatus ~~getting~~ receiving arbitrarily two amplitude values as parameters, comprising:

- an input section for receiving an input signal;
- a calculation section for calculating selectively ~~the~~ a variation component having ~~the~~ an amplitude between the [[2]] two amplitude values given as  $\beta_h$  and  $\beta_l$  from the input signal;

a signal processing section for adding ~~or subtracting~~ the variation component to ~~or from~~ the input signal or subtracting the variation component from the input signal, according to ~~the~~ an instruction from ~~the~~ a correction instruction section in order to obtain ~~the~~ a natural looking smooth or wrinkle enhanced skin image with ~~the~~ a grain and texture of a skin held in an original state; and

an output section for outputting ~~both~~ at least one of the smooth skin and the wrinkle enhanced image, ~~or outputting either of them~~ according to the instruction.